

Letter of support for International Baccalaureate Chemistry qualifications submitted for funding approval July 2023.

The purpose of this letter of support is to provide evidence of the university's recognition of the value of this qualification in preparing learners for transition to higher education courses in the subject, or a related area. This is a requirement of the Department for Education's approval process for the funding of Alternative Academic Qualifications (AAQ).

This letter of support is in relation to the following qualifications

- IBO Level 3 Certificate in HL Chemistry (AAQ)
- IBO Level 3 Certificate in SL Chemistry (AAQ)

IBO Level 3 Certificate in HL Chemistry (AAQ)

- a) We recognise this qualification specifically as meeting subject entry requirements for courses such as, Chemistry BSc, Biochemistry BSc, Forensic Science BSc, for which A-level Chemistry also is a requirement. We recognise this qualification as a 'defined science' qualification as listed [here](#).
- b) We recognise this qualification for entry onto many of our courses. As with most universities, many of our programmes do not have pre-requisite subjects and a range of subjects can provide a sound academic preparation for our degrees. IBO Level 3 Certificate in HL Chemistry (AAQ) provides this sound academic preparation.

The university has for many years accepted the IBO Level 3 Certificate in HL Chemistry for entry in these courses, either as part of the IB Diploma Programme or as a separate qualification equivalent to A Level, or as part of the IB Career-related programme. The University uses the following equivalence scale to compare the IBO Level 3 Certificate in HL Chemistry to A level Chemistry:

| IBO Level 3 Certificate in HL Chemistry (AAQ) grade | A Level Chemistry grade |
|---|-------------------------|
| 7 | A* |
| 6 | A |
| 5 | B |
| 4 | C |

We have found that the grades achieved by applicants holding the IBO Level 3 Certificate in HL Chemistry are an accurate guide to potential achievement in undergraduate courses at the university and are an effective part of the selection process.

The IBO Level 3 Certificate in HL Chemistry (AAQ) provides a firm foundation in the principles of chemistry allowing candidates to progress successfully to undergraduate courses where a deep knowledge of chemistry is a pre-requisite. The qualification content covers the fundamental principles of chemistry which includes:

- Models of the particulate nature of matter: the nuclear atom and electronic configurations
- Ideal gases
- Bonding and structure: ionic, covalent and metallic bonding
- Applying models of bonding to materials

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- Classification of matter: the Periodic Table and the classification of elements. Functional groups and the classification of organic compounds.
- Quantitative chemistry. Counting particles by mass: The mole
- Inorganic and organic chemistry
- What drives chemical reactions – enthalpy, entropy and spontaneity
- Energy from fuels
- Rates of reaction and equilibrium
- The mechanisms of chemical change: Proton transfer reactions; Electron transfer reactions; Electron sharing reactions; Electron-pair sharing reactions
- Acids and bases: Brønsted–Lowry acids and bases, pH, POH, pKa & pKb, salts, buffers
- Electrochemistry

Additionally, the qualification develops the key skills necessary for students to access undergraduate chemistry and other undergraduate science courses:

- Experimental techniques
- The use of appropriate technology to collect, analyse and model data
- The use of mathematics

In our undergraduate courses we expect our students to take an inquiring approach to their studies. The IBO Level 3 Certificate in HL Chemistry (AAQ) qualification supports this aspect through its inquiry process through which candidates demonstrate independent thinking, initiative, and insight through the following:

- Exploring and designing
- Collecting and processing data
- Concluding and evaluating

IBO Level 3 Certificate in SL Chemistry (AAQ)

a) We recognise this qualification for entry onto our related courses.

The university welcomes applicants holding the IBO Level 3 SL certificate in Chemistry (AAQ) as it provides breadth to an applicant's studies and provides a complementary qualification alongside other IBO HL courses, or other qualifications enabling applicants to prepare for courses such as Biology BSc, Biochemistry BSc, Environmental Science BSc, Nursing (BSc) by providing them with the fundamental knowledge and understanding of chemistry which supports progression to these courses. We value the skills and knowledge that students with this qualification bring and the contribution to their success and the admissions decisions we can take based on it.

The IBO Level 3 Certificate in SL Chemistry (AAQ) provides a firm foundation in the principles of chemistry allowing candidates to progress successfully to undergraduate courses where a knowledge of chemistry is desirable. The course content covers the fundamental principles of chemistry which includes:

- Models of the particulate nature of matter: the nuclear atom and electronic configurations

- Ideal gases
- Bonding and structure: ionic, covalent and metallic bonding
- Applying models of bonding to materials
- Classification of matter: the Periodic Table and the classification of elements. Functional groups and the classification of organic compounds.
- Quantitative chemistry. Counting particles by mass: The mole
- Inorganic and organic chemistry
- What drives chemical reactions – enthalpy
- Energy from fuels
- Rates of reaction and equilibrium
- The mechanisms of chemical change: Proton transfer reactions; Electron transfer reactions; Electron sharing reactions; Electron-pair sharing reactions
- Acids and bases: Brønsted–Lowry acids and bases, pH

Additionally, the qualification develops the key skills necessary for students to access undergraduate chemistry and other undergraduate science courses:

- Experimental techniques
- The use of appropriate technology to collect data
- The use of mathematics

In our undergraduate courses we expect our students to take an inquiring approach to their studies. The IB Chemistry SL qualification supports this aspect through its inquiry process which includes:

- Exploring and designing
- Collecting and processing data
- Concluding and evaluating

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